

# Special Research Report #425: Postproduction

## Optimizing Postharvest Life of Cut Iceland Poppy

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### BACKGROUND

Each year a large number of new cultivars and species are made available from plant breeders, propagators, and suppliers. Specific postharvest information must be obtained for these new species as they are made available to the market. One new cut flower, the iceland poppy, has large spectacularly-colored flowers which are an instant hit with buyers (Fig. 1). This study determined the optimum handling procedures to extend the postharvest life of iceland poppies.

### MATERIALS AND METHODS

Trials were conducted in 2003. Poppy 'Temptress' cut stems were subjected to a range of tests to determine ethylene

sensitivity and optimum cold storage duration and the effects of pretreatments and pulses, vase solutions and substrates, and commercial preservatives. After treatments, stems were placed at  $68 \pm 4^\circ\text{F}$  under approximately 200 ftc light for 12 hrs/day.

Flowers were cut in the bud stage – when the petals were visible (Photo 2). Stems wilted immediately after harvest but became turgid after several hours in water. Flowers were monitored daily to determine the end of *wholesale/retail vase life* which was designated as the first day a change was observed in the flower that would typically prevent it from being sold by a wholesaler or retailer. This occurred when the petals open enough that the flowers no longer had a cup shape.

Photo 1. Poppy 'Temptress'.



The *consumer vase life* was designated as the day a consumer would have disposed of the flower. This occurred when a petal abscised or became crinkled, discolored or brown or the stem collapsed.

Photo 2. Poppy 'Temptress' at bud stage for cutting.



### RESULTS

#### *Pretreatments*

A 24-hr 10 or 20 % sucrose pulse increased retail vase life of stems harvested as buds. These treatments, however, had no effect on consumer vase life. The 20% pulse produced similar results as the 10% solution, which would be acceptable. Similarly, commercial hydrating solutions increased wholesale/retail vase life but had no effect on consumer vase life.

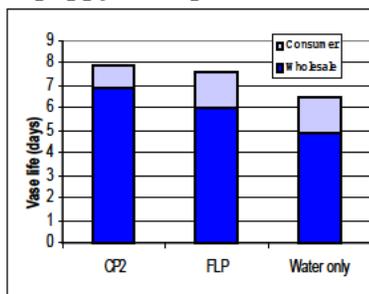
### **Cold Storage/Ethylene**

Stems could be cold stored either wet or dry for one week at 34°F with no decrease in vase life. Two weeks of cold storage reduced vase life. Treating poppy flowers with either 0.1 or 1.0 ppm ethylene and either 1-MCP or STS had no effect on retail or consumer vase life. Thus poppies are not ethylene sensitive flowers.

### **Holding Solutions**

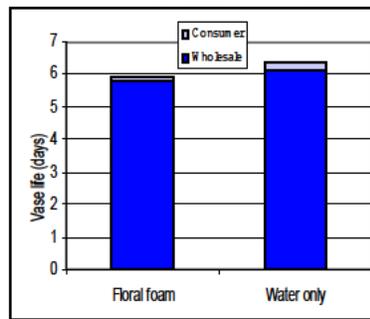
Commercial holding solutions (Floralife Professional or Chrysal Professional 2 Processing Solution) increased wholesale/retail and consumer vase life by 2 days from 5.5 days for stems only in water to 7.6-7.9 days (Fig. 1).

Fig. 1. Effect of commercial holding solutions, Chrysal Professional 2 Processing (CP2) and Floralife Professional (FLP) on vase life of poppy 'Tempress'.



Increasing sucrose content of the vase solution from 0 to 2 or 4% sucrose increased retail vase life, but had no effect on consumer vase life. Use of floral foam had no effect on retail or consumer vase life (Fig. 2).

Fig. 2. Effect of floral foam on vase life of poppy 'Tempress'.



### **CONCLUSIONS**

Poppy 'Tempress' is a spectacular flower (Photos 1 and 3) available in a wide range of colors but has a relatively short vase life of 5-6 days. Vase life can be increased to 7.6 to 7.9 days by using commercial holding solutions. The 10% sucrose pulse, commercial hydrating solutions, and 2 or 4% sucrose vase solutions increased retail vase life but had no effect on consumer vase life. Stems can be stored for one week at 34°F. Poppies can be used in floral foam with no negative effects. Without proper treatment, poppy is best suited to retail sales; however, poppies are suitable for wholesale marketing with proper handling due to the fact that the flowers tolerate cold storage well.

The optimum handling procedures for cut poppy 'Tempress' are to:

1. pretreat with 10% sucrose for 24 hours,
2. place in 2 or 4% sucrose solution or commercial holding solutions,

3. cold store at 34 °F for one week or less.

Photo 3. Poppy 'Tempress'



### **IMPACT TO THE INDUSTRY**

The 'Tempress' poppy will make a spectacular addition to the specialty cut flower market. It is critical to the industry to maintain a constant supply of new, successful cut flowers with proper postharvest handling information.

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